

## ABSTRACT

A non-adaptive system and method for improving on-axis pickup of a signal by a transducer, such as a microphone, where the signal received by the transducer is can be spatially represented as lobes or beams, the on-axis pickup being improved by removing the side portions of the beams. The input signal, or signals, has a predetermined location, whether that is at zero degrees on a polar plot or elsewhere, and the system produces an output beamwidth as narrow as possible. The input beams of the signal (or signals) received are processed to produce cancellation beams, and the cancellation beams are then steered, using phase or time delays, to overlap with the desired input beams outside of the desired output beamwidth. Via superpositioning, the cancellation beams are then subtracted from the desired input beams resulting in an output beam with a narrower beamwidth, and thus improving on-axis pickup by automatically excluding portions of the beam considered likely to be interfering sources or generally undesirable signal.